Constructing a pie chart for a given data

Understanding Notes

- Constructing a pie chart means representing given data in the form of a circle divided into sectors.
- The entire circle is 360 degrees, and each part of the data gets a sector proportional to its value.

  Formula to calculate sector angle:

- Angle of a sector = $\frac{Value\ of\ the\ category}{Total\ value} \times 360°$
- Steps to construct a pie chart:
  - Find the total value of the given data.
  - Calculate the angle for each category using the formula.
  - Draw a circle using a compass.
  - Mark each sector according to the calculated angles.
  - Label each sector clearly with the category name and value.
- Always check that the sum of all sector angles is close to 360° to ensure accuracy.

Different Types of Examples with Solutions

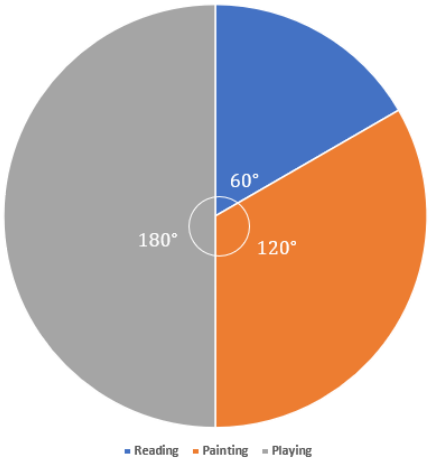
Example:

Simple Data to Pie Chart

Data:

Favorite hobbies of students:

Reading: 10, Painting: 20, Playing: 30



Solution:

- Total = 10 + 20 + 30 = 60
- Reading angle = $\frac{10}{60} \times 360 = 60°$
- Painting angle = $\frac{20}{60} \times 360 = 120°$
- Playing angle = $\frac{30}{60} \times 360 = 180°$
- Draw a circle and divide it into 60°, 120°, and 180° sectors.

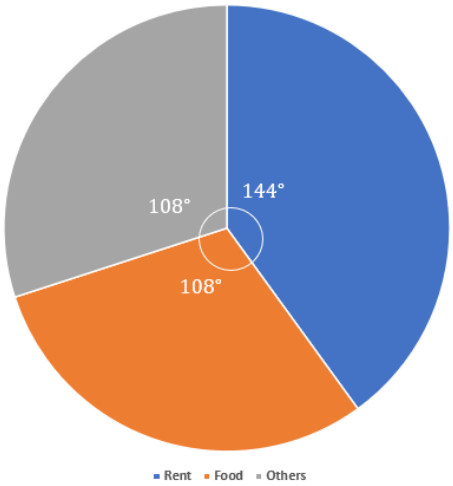
Example:

Constructing a Pie Chart from Percentage Data

Data:

Expenses:

Rent: 40%, Food: 30%, Others: 30%



Solution:

- Rent angle = $\frac{40}{100} \times 360 = 144°$
- Food angle = $\frac{30}{100} \times 360 = 108°$
- Others angle = $\frac{30}{100} \times 360 = 108°$
- Draw sectors of 144°, 108°, and 108°.

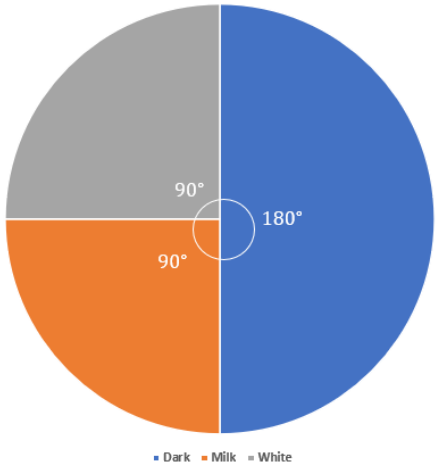
Example:

Fractional Data Pie Chart

Data:

Distribution of chocolates:

Dark: $\frac{1}{2}$, Milk: $\frac{1}{4}$, White: $\frac{1}{4}$



Solution:

- Dark angle = $\frac{1}{2} \times 360 = 180°$
- Milk angle = $\frac{1}{4} \times 360 = 90°$
- White angle = $\frac{1}{4} \times 360 = 90°$
- Draw sectors accordingly.

Summary Points

- Constructing a pie chart requires calculating the angle of each category based on its proportion.
- Use the formula $(\frac{Value}{Total}) \times 360°$ to find each sector's angle.
- The circle must represent the complete data set.
- Check that the sum of all sector angles equals approximately 360°.
- Clearly label each sector for better understanding and presentation.